SG020 - 20kW

Liquid Cooled Gas Engine Generator Sets
Standby Power Rating 20kW 60Hz

Generac 1.5L Engine
Natuarlly Aspirated
Gaseous Fueled

Standard Equipment

- All input connections in one single area
- High coolant temperature shutdown
- Low oil pressure shutdown
- Low coolant level automatic shutdown
- Overspeed automatic shutdown
- Crank timer
- Exercise timer
- Oil drain extension
- Cool flow radiator
- Closed coolant recovery system
- UV/Ozone resistant hoses
- Watertight state of the art electrical connectors
- Mainline circuit breaker
- Radiator drain extension
- Battery charge alternator
- 2 Amp static battery charger
- Battery not included
- Battery rack
- Fan and belt guards
- Isochronous governor

Features

- Innovative design and fully prototype tested
- UL2200 Listed
- Solid state frequency compensated voltage regulator
- Dynamic and static battery charger
- Sound attenuated acoustically designed enclosure
- Quiet test for low noise level exercise
- Acoustically designed engine cooling system
- High flow low noise factory engineered exhaust system
- State of the art digital control system with R100 digital control panel
- Watertight electrical connectors
- Rodent proof construction
- High efficiency, low distortion Generac designed alternator
- Vibration isolated from mounting base
- Matching Generac transfer switches engineered and tested to work as a system
- All components easily accessible for maintenance
- Electrostatically applied powder paint

Technical Specifications

fastfax

SIEMENS

SG020 Application and Engineering Data

Generator Specifications

Type . . . . . .Synchronous
Rotor Insulation . . . . . .Class F
Stator Insulation . . . . . .Class F
Total Harmonic Distortion . . . . . .<5%
Telephone Interference Factor(TIF) . . . .<50
Alternator Output Leads 3 Phase . . . . . .4 wire
Bearings . . . . . .Sealed Ball
Coupling . . . . . .Flexible Disc
Load Capacity (Standby Rating) . . . . . .20 kW
Excitation System . . . . . .Direct

NOTE: Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046, and DIN6271 standards.

Voltage Regulator

Type . . . . . .Electronic
Sensing . . . . . .Single Phase
Regulation . . . . . .± 1%
Features . . . . . .V/F Adjustable
Adjustable Voltage and Gain
LED Indicators

Generator Features

- Revolving field heavy duty generator
- Directly connected to the engine
- Operating temperature rise 120° C above a 40° C ambient
- Insulation is Class F rated at 130° C rise
- All models are fully prototyped tested

Control Panel Features

- **Seven LED Indicator Lights**
  - System ready
  - Low fuel pressure
  - Low battery
  - Low oil pressure
  - High coolant temp/low coolant temp
  - Overspeed
  - Overcrank
- **Internal Functions:**
  - 3 position switch (auto, off and manual)
  - 2 wire start for any transfer switch
  - Communicates with the Generac RTS transfer switch
  - Built-in 7 day exerciser
  - Selectable engine speed at exercise
  - Governor controller is built into the master control board
  - Temperature range -40° C to 70° C
- **Additional Functions**
  - Utility sensing
  - Delay on utility failure for engine start
  - Engine warm-up before transfer
  - Delay to retransfer to utility
  - Engine cooldown timer
  - Exerciser not set

Engine Specifications

Make . . . . . .Generac
Model . . . . . .In line
Cylinders 4
Displacement . . . . . .1.5 Liter
Bore 2.97
Stroke.....3.23
Compression Ratio 9.4:1
Intake Air System . . . . . Naturally Aspirated
Valve Seats . . . . . .Replaceable
Lifter Type . . . . . .Hydraulic

Governor Specifications

Type . . . . . .Electronic
Frequency Regulation . . . . . .Isochronous
Steady State Regulations . . . . . ± 0.25
Adjustments
Speed . . . . . .Yes
Droop . . . . . .Yes

Engine Lubrication System

Oil Pump . . . . . .Gear
Oil Filter . . . . . .Full flow spin-on cartridge
Crankcase Capacity . . . .4 Quarts

Engine Cooling System

Type . . . . . .Closed
Water Pump . . . . . .Belt driven
Fan Speed 2550
Fan Diameter . . . . . .15 inches
Fan Mode . . . . . .Pusher

Fuel System

Fuel Type . . . . . .Natural gas, propane vapor
Carburetor . . . . . .Down Draft
Secondary Fuel Regulator . . . . . .Standard
Fuel Shut Off Solenoid . . . . . .Standard
Operating Fuel Pressure . . . . . .5° - 14° H_2O

Electrical System

Battery Charge Alternator . . . . . .12V 30 Amp
Static Battery Charger . . . . . 2 Amp
Recommended Battery . . . . . .Group 26, 525CCA
System Voltage . . . . . .12 Volts

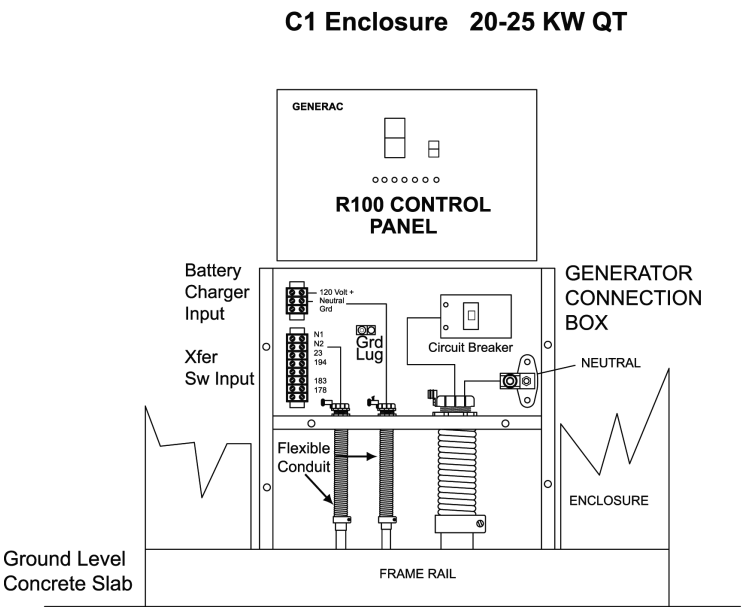
Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN6271).

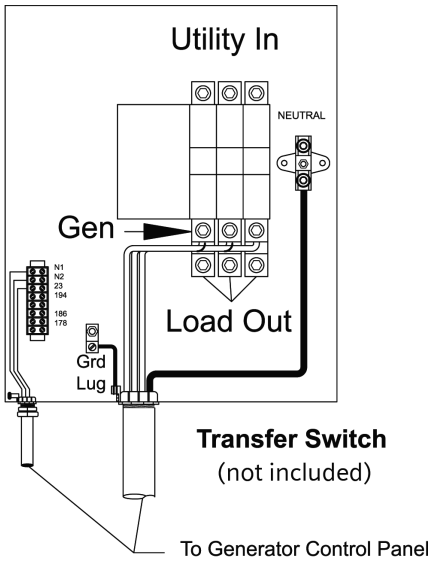
SG020 Operating Data

kW Rating			20	
Engine Size			1.5 Liter 4 cyl. inline	
Generator Output Voltage kW - 60Hz		**kW**	**AMP**	**CB Size**
120/240V, 1-phase, 1.0 pf		20	83	100
120/208V, 3-phase, 0.8 pf		20	69	80
Generator Locked Rotor KVA				
Available @ Voltage Dip of 35%				
Single phase or 208 3-phase			34	
Engine Fuel Consumption (Natural Gas) (Propane)		**Natural Gas**	**Propane**	
		(ft3/hr.)	(gal/hr.) c	u ft/hr
Exercise cycle		60	0.65	24
25% of rated load		124	1.35	49
50% of rated load		188	2.05	75
75% of rated load		250	2.73	99
100% of rated load		315	3.44	125
Engine Cooling				
Air flow (inlet air including alternator and combustion air)	ft3/min.		1,528	
System coolant capacity	US gal.		2.0	
Heat rejection to coolant	BTU/hr.		107,000	
Max. operating air temp. on radiator	°C (°F)		60 (150)	
Max. ambient temperature	°C (°F)		50 (140)	
Combustion Air Requirements				
Flow at rated power 60 Hz	cfm		91	
Sound Emissions in DBA				
Exercising at 7 meters			62	
Full load at 7 meters			75	
Exhaust				
Exhaust flow at rated output 60 Hz	cfm		177	
Exhaust temp. at muffler outlet	°F		910	
Engine Parameters				
Rated synchronous RPM	60 Hz		3,600	
HP at rated KW	60 Hz		34.8	
Power Adjustment For Ambient Conditions				
Temperature Deration				
3% for every 10 °C above - °C			25	
1.65% for every 10 °F above - °F			77	
Altitude Deration				
1% for every 100 m above - m			183	
3% for every 1000 ft. above - ft.			600	

RATING: All three phases units are rated at 0.8 power factor. All single phase units are rated at 1.0 power factor. STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage.
There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.
KW rating is based on LPG fuel and may derate with natural gas.

SG020 Interconnections

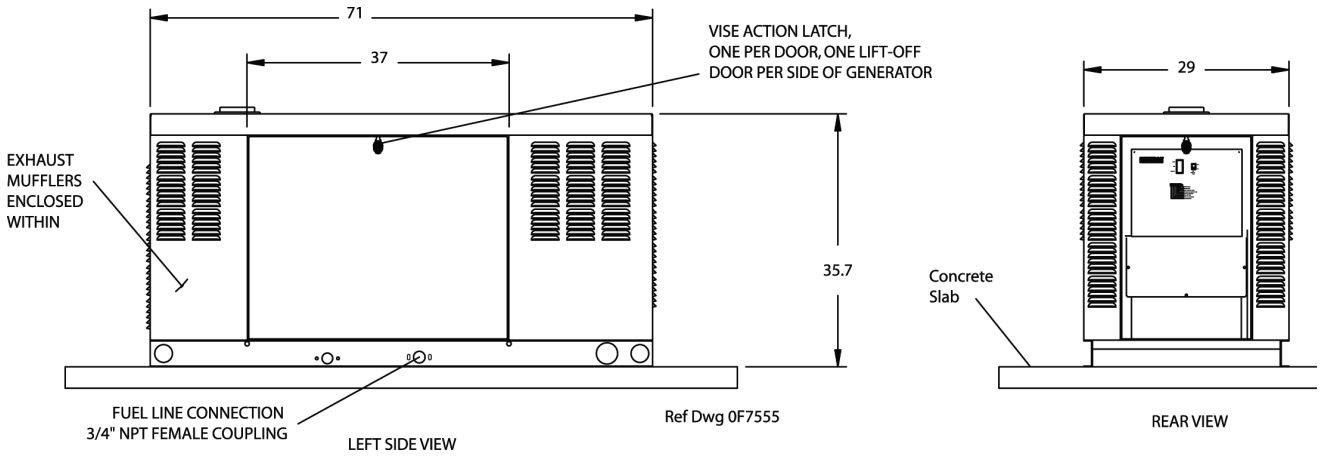




CIRCUIT BREAKER SIZE

KW	VOLTS /	AMPS	LUG SIZE
20	240 1 Ø	90	#6 to 1/0
20	208 3 Ø	80	#6 to 1/0

SG020 Installation Layout



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